AMSAT News Service Weekly Bulletins
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AMSAT NEWS SERVICE
ANS-036

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:

ans-editor@amsat.org

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SB SAT @ AMSAT $ANS-036.01
SuitSat Status 4 February 2005

AMSAT News Service Bulletin 036.01
From AMSAT HQ SILVER SPRING, MD.
February 5, 2006
To All RADIO AMATEURS
BID: $ANS-036.01

Silver Spring, Maryland
4 February 2006 at 22:00 UTC

Paraphrasing Mark Twain....the demise of SuitSat-1 is highly exaggerated!!

It is now nearly 24 hours since the successful deployment of the SuitSat-1 experiment. These past 24 hours have been a wild ride of emotions...tremendous highs...deep lows when people reported no signals and said SuitSat-1 was dead and now....some optimism.

It is absolutely clear that SuitSat-1 is alive. It was successfully turned on by the ISS crew prior to deploy and the timing, micro-controller functions and audio appear to be operating nominally. The prime issue appears to be an extremely weak signal.

I have heard several recordings and have monitored two passes today. When the signal is above the noise level, you can clearly hear partials of the student voices, the station ID and the SSTV signal. One of the complicating factors in reception is the very deep fades that occur due to the spin of SuitSat.

Based on the information we know thus far, one can narrow down the issue to the antenna, the feedline, the transmitter output power and/or any of the connections in between. Through your help, we would like to narrow down the issue further and also gather some internal telemetry from the Suit. If the transmitter is running at full power, we would expect the Suit to end

operations in the next few days to a week. If it is not, then it will operate much longer. Since we do not know how long this experiment will last, we ask for those with powerful receive stations to listen for SuitSat---especially during direct overhead passes when the Suit is closest to your area. If you can record these passes and send the audio to us, it would be most appreciated. We will continue to be optimistic that this issue will right itself before the batteries are depleted. So please KEEP LISTENING!

Based on what we have learned, we would like to provide the following guidelines to save you time and facilitate gathering information:

1) You need as high a gain antenna as possible with mast mounted pre-amps. An arrow is the minimal set...it provides very brief snippets of the communications. HTs and scanners won't cut it.

2) I would not waste your time on passes below 40 degrees elevation. SuitSat is too far from your station to receive a reliable signal. We have found that closest approach provides several seconds of SuitSat communication with 22 element yagis.

3) The "gold" we are looking for right now is the telemetry information and how long the vehicle stays operational. So if you hear any of the telemetry, please let us know.

We are also working to get the voice repeater set up on ISS to downlink SuitSat audio on 437.80 in the event that the ISS Kenwood radio can receive the SuitSat transmissions. The repeater may be operational as early as mid-day Sunday. Please do NOT transmit on 145.99, voice or packet, until we have confirmed that SuitSat is no longer transmitting. These transmissions interfere with our ability to hear SuitSat.

While the transmission part of the SuitSat experiment has not been stellar, SuitSat-1 has been tremendously successful in several areas. Some of these successes include:

-We have captured the imagination of students and the general public worldwide through this unique experiment.

-The media attention to the SuitSat project represents one of the biggest ever for amateur radio.

-We have had well over 2 million internet hits on www.suitsat.org today.

-Our student's creative artwork, signatures and voices have been carried in space and are on-board the spacesuit--the students are now space travelers as the Suit rotates and orbits the Earth.

-Carried in the spacesuit CD are pictures of Roy Neal, K6DUE, and Thomas Kieselbach, DL2MDE, two of our colleagues who have contributed to the ARISS program and have since passed away.

-We successfully deployed an amateur radio satellite in a Spacesuit from the ISS, demonstrating to the space agencies that this can be safely done.

-This ARISS international team was able to fabricate, test and deliver a safe ham radio system to the ISS team 3 weeks after the international space agencies agreed to allow SuitSat to happen. This was a tremendous feat in of itself.

SuitSat-1/Radioskaf is a space pioneering effort. Pioneering efforts are challenging. Risk is high. But the future payoff is tremendous. As you have seen, we have not had total success. But we have captured the imagination of the students and the general public. And we have already learned a lot from

this activity. This will help us and others grow from this experience.

Keep your spirits up and let's continue to be optimistic. And please keep monitoring!!

73, Frank H. Bauer, KA3HDO
ARISS International Chairman
AMSAT-NA VP for Human Spaceflight Programs

[ANS thanks Frank Bauer, KA3HDO, AMSAT-NA VP for Human Spaceflight Programs for the above information]

SB SAT @ AMSAT $ANS-036.02
Commemorative SuitSat QSL Certificate Will Be Available

AMSAT News Service Bulletin 036.02
From AMSAT HQ SILVER SPRING, MD.
February 5, 2006
To All RADIO AMATEURS
BID: $ANS-036.02

Students, scouts, teachers, ham radio operators, and the general public are encouraged to track the space suit, hear the conversations from space, copy the suit telemetry and capture the picture.

There will also be a special endorsement on the award certificate for those students who receive the "special words" that are embedded in the messages from our SuitSat student "crew members." These special words are in different languages - English, French, German, Spanish, Russian, and Japanese. You are encouraged to record the SuitSat downlink audio and get help from fellow students who know these languages.

Radio Amateurs, students and teachers who hear SuitSat should send their signal reports with a large (9x12 inch) self-addressed stamped envelope to one of these addresses listed below:

* USA: ARRL Headquarters
  SuitSat QSL
  225 Main Street
  Newington, CT 06111-1494 USA

* Canada: Radio Amateurs of Canada
  SuitSat QSL
  720 Belfast Road
  Suite 217 Ottawa Ontario K1G 0Z5

* Europe: F1MOJ - Mr CANDEBAT Christophe
  SuitSat Europe QSL Manager
  7 Rue Roger Bernard
  30470 AIMARGUES FRANCE

* Japan: SuitSat Japan QSL
  JARL International Section
  Tokyo 170-8073 JAPAN

* Russia: Alexander Davydov, RN3DK
  Novo - Mytishchinsky prospekt 52 - 111
  Mytishchi 18
  Moskovskaya obl. 141018, RUSSIA

* Other Countries: Please use the US or Canadian address above.

Also included in this spacesuit is a computer Compact Disk (CD) with images of over 300 items collected from schools and educational organizations

around the world. These include creative works of art from students as well as student signatures, school or scout logos, and class or group pictures. Students, schools and educational organizations that participated in the development of this disk earlier this year will all be part of the SuitSat spacewalk---as their creative works, signatures and pictures all float in space!

[ANS thanks the ARISS team for the above information]

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SB SAT @ AMSAT $ANS-036.03
Extensive Media Coverage on SuitSat Deployment

AMSAT News Service Bulletin 036.03
From AMSAT HQ SILVER SPRING, MD.
February 5, 2006
To All RADIO AMATEURS
BID: $ANS-036.03

Interest in SuitSat was on the increase prior to deployment with an abundance of press attention. Media coverage has been extensive. Here are links to some of the feature stories:

New York Times
"An Orbiting Spacesuit With Transmitter"
http://www.nytimes.com/2006/01/28/science/28suit.html?_r=1

Energia website
"Science Research on ISS Russian Segment Technical Research RADIOSKAF EXPERIMENT"
http://www.energia.ru/english/energia/iss/researches/techn-35.html

YubaNet.com
"SuitSat: Disembodied Spacesuit set to orbit Earth"
http://www.yubanet.com/artman/publish/article_30883.shtml

National Public Radio
"SuitSat to Orbit Earth"
http://www.npr.org/templates/story/story.php?storyId=5183146

CNN Science & Space
"One small step for trash is giant leap for ham-kind"
http://www.cnn.com/2006/TECH/space/02/02/recycled.spacesuit.reut/index.html?section=cnn_topstories

Science@NASA
"Using a simple policed scanner or ham radio, you can listen to a disembodied spacesuit circling Earth"
http://science.nasa.gov/headlines/y2006/26jan_suitsat.htm

NASA
"Expedition 12 Preps for Second Spacewalk"
http://www.nasa.gov/mission_pages/station/main/index.html

ARRL
"ISS Crew Prepares for Space Walk, 'SuitSat-1' Launch"
http://www.arrl.org/news/stories/2006/01/27/4/?nc=1

AMSAT
"SuitSat Readies for Operation"
http://www.amsat.org/amsat-new/index.php

NASA Education

"Hearing Voices From Space"
http://www.nasa.gov/audience/forstudents/k-4/home/F_Hearing_Voices.html
http://www.nasa.gov/audience/forstudents/5-8/features/F_Hearing_Voices.html
http://www.nasa.gov/audience/forstudents/9-12/features/F_Hearing_Voices_From_Space.html
http://www.nasa.gov/audience/forstudents/postsecondary/features/F_Hearing_Voices_From_Space.html

NASA television has reported on SuitSat. For more information, see:
http://www.nasa.gov/multimedia/nasatv/index.html

[ANS thanks Carol, KB3LKI and Media Resources for the above information]

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SB SAT @ AMSAT $ANS-036.04
ARISS Status January 30, 2006

AMSAT News Service Bulletin 036.04
From AMSAT HQ SILVER SPRING, MD.
February 5, 2006
To All RADIO AMATEURS
BID: $ANS-036.04

1. New York Contact Successful

On Tuesday, January 24, Aquebogue School in Aquebogue, New York experienced a successful contact with the ISS. Bill McArthur, KC5ACR, answered 20 questions asked by ten students. Video was fed to three other local school districts via a local videoconferencing network. The weekly Aquebogue newspaper, News-Review, covered the event. Echolink had 38 connections from 11 countries: Australia, Canada, USA, UK, Japan, Iraq, Italy, Russia, Spain, New Zealand, and Thailand. IRLP received 24 connections from the USA, UK, Canada, and Australia. The audio was also streamed on: www.discoveryreflector.ca

2. West Point Contact Successful

Cadets from the Ham Radio Club at the United States Military Academy in West Point had the privilege to speak with Bill McArthur, KC5ACR, on Thursday, January 26. Among the dignitaries attending the event was the Electrical Engineering program director, Colonel Barry Shoop. Professors from other departments who advise some of the cadets who questioned McArthur in a study of lunar habitation requirements also attended. The school has 4000 members, many of whom listened to the contact via local closed circuit (intranet).

3. Upcoming School Contacts

Dale High School in Dale, Oklahoma has been scheduled for an ARISS contact. It will take place on February 7 at 14:56 UTC.

E.L. DeGolyer Elementary School in Dallas, Texas has been approved for a contact with the ISS. It is planned for February 7 at 16:32 UTC.

Pine Ridge Middle School in Naples, Florida has been scheduled for a contact on February 8 at 15:24 UTC.

4. "Discover Engineering Family Day" Contact

"Discover Engineering Family Day" will be held on Saturday, February 18 in the National Building Museum in Washington, D.C. Arrangements are being made for a contact via Amateur Radio with astronaut Bill McArthur for the morning of the 18th (11 am ET).

5. ARRL Article on Georgia, New York Contacts

ARRL ran a story covering the Georgia Tech and Aquebogue School contacts. The article, "Onboard Fires, Safe Grounding Question Topics for NA1SS School Contacts," may be found on its website. See: http://www.arrl.org/news/stories/2006/01/27/2/?nc=1

6. SuitSat Interest Ramped Up

Interest in SuitSat was on the increase last month. The SuitSat website, http://www.suitsat.org received over 105,000 hits in January, coming from over 350 referring sites.

7. McArthur Closes in on DXCC Award

Bill McArthur continues to work DXCC (100 international contacts) entities. As of January 29, it was reported that he has worked 91 of the 100 entities needed for the DXCC award. ARRL covered McArthur's accomplishments in an article entitled, "ISS Commander Completes WAS from Space, Gaining On DXCC." See: http://www.arrl.org/news/stories/2006/01/26/2/?nc=1

[ANS thanks Carol, KB3LKI for the above information]

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SB SAT @ AMSAT $ANS-036.05
First U.S. Satellite Launched 48 Years Ago

AMSAT News Service Bulletin 036.05
From AMSAT HQ SILVER SPRING, MD.
February 5, 2006
To All RADIO AMATEURS
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Forty eight years ago a team of scientists and engineers successfully launched Explorer 1, the first U.S. satellite to orbit around Earth. This historic accomplishment marked the nation's debut in the Cold War-era space race and set the stage for the establishment of the civilian space agency that would become NASA.

NASA's Jet Propulsion Laboratory, Pasadena, CA, was still operated as a research laboratory for the U.S. Army when it was selected in November 1957 to develop the first U.S. satellite, its science package, the communications system and the high-speed upper stages for the Army's Redstone rocket that would guide the tiny, 9-kilogram (20-pound) Explorer 1 into the great unknown. JPL and the Army completed the assignment and successfully launched the satellite in less than three months. JPL and the Army Ballistic Missile Agency, based in Huntsville, AL, joined in firing the satellite toward space from the missile test center at Cape Canaveral, FL on Jan. 31, 1958.

The scientific experiment onboard, a cosmic ray detector built by Dr. James Van Allen of the University of Iowa, soon returned one of the most important findings of the space program: the discovery of what are now known as the Van Allen Radiation Belts around Earth.

Explorer 1 went on to operate for three months.

[ANS thanks Arthur, N1ORC for the above information]

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SB SAT @ AMSAT $ANS-036.06
IMAGE Satellite Captures Aurora Spectacular

AMSAT News Service Bulletin 036.06
From AMSAT HQ SILVER SPRING, MD.
February 5, 2006
To All RADIO AMATEURS
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From space, the aurora is a crown of light that circles each of Earth's poles. The IMAGE satellite captured this spectacular view of the aurora australis (southern lights) on September 11, 2005, four days after a record-setting solar flare sent plasma flying towards the Earth.

http://earthobservatory.nasa.gov/Newsroom/NewImages/images.php3?img_id=17165

For the latest news and views of Earth from space, visit the NASA Earth Observatory site at:

http://earthobservatory.nasa.gov

[ANS thanks the NASA Earth Observatory for the above information]

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SB SAT @ AMSAT $ANS-036.07
A Personal Note from This Week's ANS Editor

AMSAT News Service Bulletin 036.07
From AMSAT HQ SILVER SPRING, MD.
February 5, 2006
To All RADIO AMATEURS
BID: $ANS-036.07

One of the proudest moments of my 40-plus years in amateur radio came during the recent EVA of ISS Expedition 12. To watch and listen as Bill McArthur, KC5ACR, talked about amateur radio while working in the vacuum of space was truly an inspiring moment. For those who missed it, Bill talked for several minutes with CAPCOM Mike Foale about the 96 countries he has worked and the 1,000 contacts he has made from space.

Those of us who have been around this hobby remember when Owen Garriot, W5LFL became the first ham in space in the culmination of many people's efforts -- through the SAREX program -- to make amateur radio in space a reality. Today we have ARISS and ambassadors of amateur radio like Bill McArthur.

A personal note of thanks to all the people and organizations -- ARISS, AMSAT, ARRL and NASA -- who continue to support amateur radio in space and a big thank you to Bill McArthur for making amateur radio such a big part of Expedition 12.

[ANS thanks NASA TV for the above-mentioned live coverage]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

73,
This week's ANS Editor,
Al Marote, WA1LBG
AMSAT LM-1957
wa1lbg at amsat dot org